



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/651,301	08/30/2000	Richard W. Friesen	5069	2518

20306 7590 06/22/2004

MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP  
300 S. WACKER DRIVE  
32ND FLOOR  
CHICAGO, IL 60606

EXAMINER
----------

PATEL, JAGDISH

ART UNIT	PAPER NUMBER
----------	--------------

3624

DATE MAILED: 06/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/651,301

Applicant(s)

FRIESEN ET AL.

Examiner

JAGDISH PATEL

Art Unit

3624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on amendment filed 2/5/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 22-91 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-91 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 167.17
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. This communication is in response to amendment filed 2/5/04.

**Response to Amendment**

2. The specification has been amended per request. Claims 1-21 have been cancelled. Claim 22 has been amended and new claims 23-90 have been added.

***Response to Arguments***

3. Applicant's arguments concerning previous rejection of claims 1-33 under 35 USC 103 as being unpatentable over Yahoo! Finance, Nelson and Niebor references have been rendered moot in view of the cancellation of the aforementioned claims.

***Claim Objections***

4. The claims are improperly numbered. The new claims should be numbered starting with claim 34. Note that the claim numbers referenced in this office action follows the applicant's amendment.

Appropriate correction is required.

Art Unit: 3624

*Claim Rejections - 35 USC § 101*

**5. 35 U.S.C. 101 reads as follows:**

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 22-91 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. (claims are not within technological arts)

As an initial matter, the United States Constitution under Art. I, §8, cl. 8 gave Congress the power to "[p]romote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries". In carrying out this power, Congress authorized under 35 U.S.C. §101 a grant of a patent to "[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition or matter, or any new and useful improvement thereof." Therefore, a fundamental premise is that a patent is a statutorily created vehicle for Congress to confer an exclusive right to the inventors for "inventions" that promote the progress of "science and the useful arts". The phrase "technological arts" has been created and used by the courts to offer another view of the term "useful arts". See *In re Musgrave*, 167 USPQ (BNA) 280 (CCPA 1970). Hence, the first test of whether an invention is eligible for a patent is to determine if the invention is within the "technological arts".

Further, despite the express language of §101, several judicially created exceptions have been established to exclude certain subject matter as being patentable subject matter covered by §101. These exceptions include

Art Unit: 3624

"laws of nature", "natural phenomena", and "abstract ideas". See *Diamond v. Diehr*, 450, U.S. 175, 185, 209 USPQ (BNA) 1, 7 (1981). However, courts have found that even if an invention incorporates abstract ideas, such as mathematical algorithms, the invention may nevertheless be statutory subject matter if the invention as a whole produces a "useful, concrete and tangible result." See *State Street Bank & Trust Co. v. Signature Financial Group, Inc.* 149 F.3d 1368, 1973, 47 USPQ2d (BNA) 1596 (Fed. Cir. 1998).

This "two prong" test was evident when the Court of Customs and Patent Appeals (CCPA) decided an appeal from the Board of Patent Appeals and Interferences (BPAI). See *In re Toma*, 197 USPQ (BNA) 852 (CCPA 1978). In *Toma*, the court held that the recited mathematical algorithm did not render the claim as a whole non-statutory using the Freeman-Walter-Abele test as applied to *Gottschalk v. Benson*, 409 U.S. 63, 175 USPQ (BNA) 673 (1972). Additionally, the court decided separately on the issue of the "technological arts". The court developed a "technological arts" analysis:

The "technological" or "useful" arts inquiry must focus on whether the claimed subject matter...is statutory, not on whether the product of the claimed subject matter...is statutory, not on whether the prior art which the claimed subject matter purports to replace...is statutory, and not on whether the claimed subject matter is presently perceived to be an improvement over the prior art, e.g., whether it "enhances" the operation of a machine. In *re Toma* at 857.

In *Toma*, the claimed invention was a computer program for translating a source human language (e.g., Russian) into a target human language (e.g.,

Art Unit: 3624

English). The court found that the claimed computer implemented process was within the "technological art" because the claimed invention was an operation being performed by a computer within a computer.

The decision in *State Street Bank & Trust Co. v. Signature Financial Group, Inc.* never addressed this prong of the test. In *State Street Bank & Trust Co.*, the court found that the "mathematical exception" using the Freeman-Walter-Abele test has little, if any, application to determining the presence of statutory subject matter but rather, statutory subject matter should be based on whether the operation produces a "useful, concrete and tangible result". See *State Street Bank & Trust Co.* at 1374. Furthermore, the court found that there was no "business method exception" since the court decisions that purported to create such exceptions were based on novelty or lack of enablement issues and not on statutory grounds. Therefore, the court held that "[w]hether the patent's claims are too broad to be patentable is not to be judged under §101, but rather under §§102, 103 and 112." See *State Street Bank & Trust Co.* at 1377. Both of these analysis goes towards whether the claimed invention is non-statutory because of the presence of an abstract idea. Indeed, *State Street* abolished the Freeman-Walter-Abele test used in *Toma*. However, *State Street* never addressed the second part of the analysis, i.e., the "technological arts" test established in *Toma* because the invention in *State Street* (i.e., a computerized system for determining the year-end income, expense, and capital gain or loss for the portfolio) was already determined to be within the technological arts under the *Toma* test. This dichotomy has been recently acknowledged by the Board of Patent Appeals and Interferences (BPAI) in affirming a §101 rejection finding the claimed

Art Unit: 3624

invention to be non-statutory. See Ex parte Bowman, 61 USPQ2d (BNA) 1669 (BdPatApp&Int 2001).

In the present application, Claims 22-90 have no connection to the technological arts. None of the steps indicate any connection to a computer or technology. As an example, steps of displaying in claim 22 and 23-90 are interpreted as manually displaying data pertinent to trading goods on a multidimensional space using a predefined coordinate system for reference. Broadly interpreted such representation of trading data may be accomplished without technological implements. It is noted that mere recitation of technological art in the preamble (in the instant claims 22 and 23 reciting "electronic trading system" and "trading ...electronically" respectively, without any technological implement recited in the claim limitations that support the preamble recitation of technology leads to interpretation that these steps and therefore the entire claimed invention could be performed manually. Similarly independent claim 58 and dependent claims therefrom fail to positively recite technological means such as a digital processor (or a computer) to implement the method steps of the claims that would render the claim(s) within technological arts. Therefore, the claims are analyzed as being not within

Art Unit: 3624

technological arts and hence directed towards non-statutory subject matter.

To overcome this rejection the Examiner recommends that Applicant amend the claims to better clarify which of the steps are being performed within the technological arts, such as the process of the method performed based on application of a computer processor appropriate within the scope of the disclosure.

It is also noted that the aforementioned analysis applies to all presented claims.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 33-38, 41, 68-73 and 76 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claims 33-38 recite the step of "displaying an action line relative to the value axis" which does not functionally relate to the displaying of the indicators representing orders recited



Art Unit: 3624

in parent claim 23. This renders the claim(s) indefinite because the action line is not correlated with the indicators representing orders for the products.

Similar analysis also renders claims 68-73.

10. Claim 41 recites comprising placing an order for one of the first and second products.. which have no functional relationship to the steps recited in the parent claim. Therefore, the claim does not further limit "generating" or "displaying" steps which renders the claim indefinite in scope.

This analysis also applies to claim 76.

#### **Claim Rejections - 35 USC § 102**

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

**A person shall be entitled to a patent unless –**

**(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.**

12. Claims 22 and 23 rejected under 35 U.S.C. 102(b) as being anticipated by Marshall (US Pat. 5,675,746).

Art Unit: 3624

Per claim 22, Marshall teaches a method for displaying information regarding the trading of a plurality of goods, (col. 3 L 35+ ...view otherwise unmanageable amount of complex information about financial markets..equities, commodities, currencies, derivatives and related products) comprising:

Displaying a plurality of book axes, each book axis representing a book for a corresponding one of the plurality of goods..

Refer to col. 3 L 52+ .. financial information, is displayed in a virtual reality world, it is represented by real world objects in three dimensional form, called metaphors. The present invention, in the representative embodiment, creates a three-dimensional virtual reality world of financial information. The virtual reality world presents specific financial information as three dimensional objects, or metaphors, as part of the virtual reality world.

col. 4 L 6-10 ...Thus, for example, the geography of the virtual reality world (in the representative embodiment, it is market geography), is defined, in part, by a three dimensional coordinate system that sets out the borders of "geographical" features in the terrain. The geography can represent information elements that are non-integer taxonomies of the financial information. Thus, the present invention can map many characteristics of the system being modeled to a representative geography of the system where its taxonomy comes to life as a terrain.

Displaying a value axis in relation to the plurality of book axes, the value axis having units of value common to the plurality of goods; and

Col. 4 .. L 34+ user interface module, allows the user to input criteria to select certain parts of the stream of financial data for display and to input display settings for the virtual reality world and metaphors in the virtual reality world. In effect, the user interface module allows the user to define his or her virtual reality worlds.

Col. 11 30-55 Refer to discussion of axis display parameter 48, ..the three axes can represent any category of financial information

Displaying indicators representing at least one order for at least for one of the plurality of goods, wherein the indicators are displayed in locations along the book axes corresponding to the value axis.

Col. 6 L 10 + refer to various indicators that can be displayed that represent plurality of (financial) products, also refer to col. 7 L 4+ which recites that financial indicators can be specified by the user ..where he is presented with (i.e. display of the indicators)virtual reality world of

Art Unit: 3624

selected financial information. For detailed description of the display indicators also refer to Figures 3 in association with Figure 2.

Col. 11 30-55 Refer to discussion of axis display parameter 48, ..the three axes can represent any category of financial information.

13. Per claim 23, Marshall teaches a method for displaying transactional information relating to the trading of at least two products electronically (see SUMMARY OF THE INVENTION COL. 3-4), comprising:

Generating a value axis wherein values along the value axis represent at least two products;

displaying indicators representing orders for at least two products relative to the value axis.

(col. 11 L 30- col. 4 L 36, refer to discussion of axis display parameter 48. Since the axes can represent any category of financial information, it includes representation of prices (values) of the financial products such as stocks, options etc., the value axis can also be defined to show two types of stocks as discussed)

14. Claims 23-24, 26 and 29-31 and 53-57 are rejected under 35 U.S.C. 102(b) as being anticipated by Nevo et al. (US 5,946,666) (Nevo).

Per claims 23 and 24: Nevo teaches a method for displaying transactional information relating to the trading of at least two products electronically, comprising:

Generating a value axis wherein values along the axis represent values associated with the at least two products;

(see Fig. 5, value axis is shown on the right hand vertical column(s), refer to col. 13 L 13-25 for explanation)

displaying indicators representing orders for at least two products relative to the value axis (see col. 13 L 13-25 for explanation..ask and bid prices).

Per claim 26 Nevo discloses that the value axis represent prices (bids) associated with individual securities (see Fig. 5).

Per claim 29 Nevo discloses locating indicator relative to the value axis based upon a price of the order

(Fig. 5, ..current trade value)

Per claim 30 Nevo discloses indicators for at least two products are displayed in a single window (see Fig. 5, security performance indicators 83, 84, 85).

Per claim 31 Nevo discloses indicators comprise icons (col. 12 L 29-42, see icons 72).

Claims 53: indicators are base in ..data feed ..updated based on the data feed (see Fig. 1 sensors 12 are data feeds and displayed indicators are updated based on the data feeds 12, col. 5 L 61+).

Claim 54: displaying values along the value axis (see Fig. 5 and corresponding discussion at col. 13 L 13+).

Claims 55 and 56: each indicator represents individual orders..plurality of orders (col. 13 L 13+ These values will

Art Unit: 3624

include current trade value..ask and bid values (other values may be included at a later stage).

Claim 57: wherein the products are semi-fungible, fungible or non-fungible (see col. 4 L 1-12 ..stock index value..).

***Claim Rejections - 35 USC § 103***

15. The following is a quotation of 35 USC 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 25, 27,28 are rejected under 35 USC 103(a) as being unpatentable over Nevo et al. (US 5,946,666) and further in view of Marshall.

Claim 25: Nevo fails to disclose the step of visually distinguishing indicators that represent bids from indicators that represent offers.

However Marshall teaches depicting visually distinguishing market indicators as recited (see claim 22 analysis and relevant text of Marshall).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Nevo to visually distinguishing market indicators because it would allow an user to discern and accurately perceive the market indicators to make trading decisions.

Per claims 27 and 28: Nevo fails to teach that the values along the value axis represent volatility or unifying characteristics. However, both volatility and unifying characteristics of two (financial) products are old and well-

Art Unit: 3624

known parameters. For example, Marshall teaches monitoring of any category of financial information including price or volatility (see col. 11 L 29-45) and unifying characteristics of options such as price of underlying security well known to option traders.

See claim 25 analysis for motivation statement.

17. Claims 32, 39-40 and 58- are rejected under 35 USC 103(a) as being unpatentable over Nevo.

Per claim 32 Nevo fails to teach that the icons are sized according to a quantity value.

Official Notice is taken that selecting size of an icon according to the magnitude of underlying value of a parameter represented by the icon is old and well known, for example, video graphic shows different size icon to signify relative magnitude of the underlying value.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to size the icons shown in Nevo according to a quantity value such as volume, price change, order size etc. in order to improve the recognition of the information displayed.

Claims 39-40 are similarly analyzed as per claim 32.

Regarding claims 59: Nevo discloses a method for displaying market information relating to electronic trading of products as claimed

Receiving bid and offer information for a first product and a second product .. (see col. 4 L 1-12, securities, security index values, see also col 13 bid and ask values);

Generating a common index value axis .. (see Fig. 5, value axis is shown on the right hand vertical column(s), refer to col. 13 L 13-25 for explanation);

Displaying a first indicator associated with ..for the first product in relation to a first value level on the common value axis (see col. 5 L 1+ ..each security index is transformed and compared to the prescribed sequence of reference values, see also Figure 5 and col. 13-25);

Displaying a second indicator associated with ..for the first product in relation to a second value level on the common value axis (see col. 5 L 1+ ..each security index is transformed and compared to the prescribed sequence of reference values, see also Figure 5 and col. 13-25);

Displaying a third indicator associated with ..for the second product in relation to a third value level on the common value axis (see col. 5 L 1+ ..each security index is transformed and compared to the prescribed sequence of reference values, see also Figure 5 and col. 13-25);

Displaying a fourth indicator associated with ..for the second product in relation to a fourth value level on the common value axis (see col. 5 L 1+ ..each security index is transformed and compared to the prescribed sequence of reference values, see also Figure 5 and col. 13-25);

Whereby the indicators for the first and the second products are displayed such that relative values are visually apparent. (see above citations).

Art Unit: 3624

Nevo fails to explicitly teach current highest bid price and current lowest ask price as parameters whose indicators are displayed as set forth in the claim.

Official Notice is taken that current highest bid price and current lowest ask price are old and well known and the significance of monitoring these parameters to gauge performance a financial product (stocks, options etc) for profitable trades is recognized by professional traders.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate current highest bid price and current lowest ask price for each of the financial products because displaying current highest bid price and current lowest ask price for each product would enable the user/trader to better comprehend the status of the market condition of each product in relation to each other (such as options).

Claims 59,60 and 62: Please refer to claim 60 analysis.

Claim 61: Official Notice is taken that highlighting an indicator (for exempling changing color of the display of the icon) is old and well.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to visually highlight a particular indicator per claim because it would provide clear indication that the underlying value or condition has been changed.

Claim 63: see claim 26 analysis.

Claims 64 and 65 : Nevo fails to teach that the values along the value axis represent volatility or unifying characteristics. However, both volatility and unifying characteristics of two (financial) products are old and well-known parameters. For example, Marshall teaches monitoring of any category of financial information including price or volatility (see col. 11 L 29-45) and unifying characteristics of



Art Unit: 3624

options such as price of underlying security well known to option traders.

See claim 25 analysis for motivation statement.

Claims 66 and 67 have been analyzed as per respective claims 31 and 32.

Claims 74 and 75 have been analyzed as per respective claims 39 and 40.

Claim 91: wherein the products are semi-fungible, fungible or non-fungible (see col. 4 L 1-12 ..stock index value..).

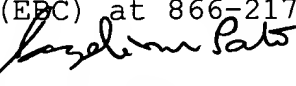
### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAGDISH PATEL whose telephone number is (703)308-7837. The examiner can normally be reached on 800AM-600PM M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vincent Millin can be reached on (703)308-1065. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jagdish N. Patel   
(Primary Examiner, AU 3624)